

tory motions, had then become sedentary, and lay moored to a rocky surface, or was partially buried in its sandy matrix; in such a position its upper or more exposed surface consisted of the posteal half of the area; and this portion, either exposed or discovered by the motion of the excurrent and incurrent siphons, invariably became a prey to the marine flesh-eaters: a portion more or less large is always found broken away and removed. The whole general aspect of the adult valves exhibits that worn or abraded condition with which we are also familiar in *Byssoarca*, and doubtless resulted from similar causes in both instances.

I hope to present faithfully executed figures of this byssiferous *Trigonia* in a Monograph on the British Trigonias, now in preparation for the Palaeontographical Society.

IV.—*On the Coleoptera of St. Helena.*

By T. VERNON WOLLASTON, M.A., F.L.S.

[Concluded from vol. iv. p. 417.]

Fam. 19. Anthribidæ.

(Subfam. ARÆOCERIDES.

*Linea transversa prothoracica basilaris*, marginem ipsum basalem elevatum efficiens.)

Genus 35. ARÆOCERUS.

Schönherr, Curc. Disp. Meth. 40 [script. Aræcerus] (1826).

52. *Aræocerus fasciculatus*†.

*A. breviter ovalis*, crassus, brunneo-piceus, pube brevi squamæformi demissa cinerea griseaque vestitus necnon in elytris plus minus obsoletissime (sc. in interstitiis alternis) longitudinaliter tessellatus; capite prothoraceque (subter pube) opacis, densissime et rugose punctatis, illo in medio tenuiter carinato oculis maximis prominentibus, hoc subconico, postice lato bisinuato, costa transversa in marginem basalem cœunte necnon utrinque marginem lateralem (usque ad medium lateris ductum) efficiente, angulis posticis subrectis; elytris apice truncato-rotundatis, (subter pube) subopacis, densissime et rugose granulatis ac leviter crenulato-striatis; antennis pedibusque elongatis et (præcipue illis) gracilibus, illis rufo-testaceis clava obscuriore, his rufo-ferrugineis, tarsorum art<sup>o</sup> 1<sup>mo</sup> longissimo.

Long. corp. lin. 2–2½.

*Curculio fasciculatus*, De Geer, Ins. v. 276, t. 16. f. 2 (1775).

*Anthribus coffeæ*, Fab., Syst. Eleuth. ii. 411 (1801).

Two examples of an *Aræocerus*, which were taken at St. Helena by Mr. Melliss, I feel almost confident are referable to the *A. fasciculatus* (which is usually known in collections as the *coffeæ* of Fabricius), though I have thought it desirable to

give a careful diagnosis of them, in the event, perhaps, of their being identified hereafter with some cognate form. The insect, however, is evidently a variable one; and there are individuals in the British Museum, bearing the label "*coffea*," which seem in no way to differ from the pair now before me; whilst the fact that the species (the larva of which appears to subsist within various seeds and berries which are used as articles of food) has become naturalized, through the medium of commerce, in most of the warmer countries of the civilized world would go far to render it probable that the St.-Helena one is the true *fusciculatus*, and has been established in the island (as elsewhere) by indirect human agency.

With the exception of the *Notioxenus Bewickii*, the present insect is considerably larger than any of the other members of the *Anthribide* hitherto detected in St. Helena; and, apart from the greatly elongated first joint of its feet, and the fact of its transverse prothoracic keel being removed to the *extreme* base (so as to form a mere elevated margin to the pronotum), and then produced, at right angles, to about midway along the lateral edge (characters which are more strictly *generic* ones), it may be further recognized by its compact thickened body and short-oval outline, and by its brownish piceous surface being clothed with an abbreviated, decumbent, scale-like, cinereous pubescence, the alternate elytral interstices having additionally more or less obsolete indications of being obscurely tessellated, which, however, is sometimes scarcely traceable. Its eyes are large and prominent, its antennæ rufo-testaceous and extremely slender, and its surface, when the pubescence is removed, will be seen to be nearly opaque, and closely and coarsely sculptured.

(Subfam. NOTIOXENIDES.

Linea transversa prothoracica conspicue *ante basin* sita, utrinque plus minus arcuata sed nullo modo per marginem lateralem retrorsum ducta.)

Genus 36. NOTIOXENUS.

Wollaston, Journ. of Ent. i. 212 (1861).

*Corpus* vel oblongum vel ovato-oblongum, aut pubescenti-variegatum aut subglabrum, plus minus pictum: *rostro* brevi, triangulari, apice rotundato-truncato; *oculis* rotundatis, integris: *prothorace* subovato postice truncato, ante basin vel linea impressa vel (sæpius) carinula elevata, utrinque plus minus leviter arcuata, transversim instructo: *scutello* minutissimo, ægre observando: *elytris* ovalibus (rarius ovatis) basi truncatis, postice subabbreviatis (pygidium vix tegentibus) necnon ad apicem ipsum singulatim paulo rotundatis. *Antennæ* graciles, rectæ, in pagina superiore rostri (mox intra oculos

in fovea) insertæ; art<sup>is</sup> 1<sup>mo</sup> et 2<sup>do</sup> longiusculis (illo paulo robustiore curvato), 3<sup>to</sup> ad 8<sup>um</sup> longitudine subæqualibus, latitudine leviter crescentibus, reliquis clavam elongatam laxam sat abruptam pilosam 3-articulatam efficientibus (9<sup>no</sup> et 10<sup>mo</sup> intus obsolete subproductis, ult<sup>mo</sup> subgloboso). *Pedes* breviusculi, subgraciles; *tibiis* rectis, ad apicem muticis; *tarsis* pseudotetrameris, art<sup>o</sup> 1<sup>mo</sup> quam 2<sup>dus</sup> in *anterioribus* vix sed in *posticis* multo longiore, 2<sup>do</sup> paulo latiore, ad apicem leviter emarginato, 3<sup>ium</sup> latiore bilobum recipiente; *unguiculis* appendiculatis.

I have thought it desirable to give a fresh (and slightly amended) diagnosis of this interesting genus, not merely on account of its extreme eccentricity, but because, in conjunction with *Microxylobius*, *Nesiotes*, and *Trachypylæosoma*, of the *Curculionidæ*, it is amongst the most characteristic and truly indigenous of the Coleopterous forms which have hitherto been detected in St. Helena. Indeed it is difficult to overrate the importance, in a small insular catalogue, of a group like the present one—combining as it does the structural features of the *Anthribidæ* with the external outline and aspect of the genuine Curculionids; and I may add that the great specific dissimilarity of the four representatives enunciated below induces me to suspect still (as I did in 1861, when only two of them had been brought to light) that there are many *Notioxeni*, of a more or less intermediate *facies*, yet to be discovered, and for which therefore we may confidently look. Apart from its singular Curculionideous contour, *Notioxenus* is remarkable amongst its immediate congeners for (more especially) its transverse prothoracic keel being considerably removed from the immediate base of the prothorax, and for being replaced in one of the species (the *N. Bewickii*, which I have nevertheless regarded as the type of the genus) by an *impressed* line. In both instances, however, the line (whether channel or keel) is more or less arcuate, or very gradually and slightly curved towards either side; but it is *not* produced at right angles, in any degree whatsoever, along the lateral edges of the pronotum. The sculpture of the *Notioxeni* varies greatly, according to the species; but they appear to be *ornamented* with (sometimes obscure) patches and bands, either on the surface itself or (more often) produced by the short and somewhat paler decumbent pubescence with which they are more or less clothed. Whether they possess any saltatory power (as in *Araocerus*) I have not yet been able to ascertain.

§ I. *Linea prothoracica impressa, canaliculum efficiens.*

53. *Notioxenus Bewickii.*

*N. fusco-niger*, subopacus. impunctatus sed minutissime obsoleteque

subrugulosus, pube brevi squamæformi demissa grisea vestitus necnon hinc inde cinereo-pictus; capite distinctius ruguloso (fero etiam punctato), oculis magnis sed haud prominentibus; prothorace linea subbasali utrinque regulariter subcurvata impresso plagisque 3 longitudinalibus, plus minus obsoletis, fractis, cinereo-squamosis picto; elytris argute impunctato-striatis, maculis minutis plurimis cinereo-squamosis irroratis, ad basin et humeros interdum obsolete rufescentioribus; antennis gracilibus, rufotestaceis, apicem versus infuscatis; pedibus fusco-piceis, genibus rufescentioribus, tarsis picescenti-testaceis.

Long. corp. lin. circa 3.

*Notioxenus Bewickii*, Woll., *loc. cit.* 213, pl. xiv. f. 1 (1861).

A most remarkable species, differing from the other *Notioxenus* hitherto detected not only in its much larger size and in its griseous-black, densely clothed surface, which appears to be obscurely ornamented with small and indistinct dull cinereous patches, but likewise (which is an extremely anomalous feature) in its subbasal prothoracic line being *impressed*, instead of raised. With the exception of the head, which is more coarsely sculptured, its surface is impunctate, though rather alutaceous and subopaque (as may be seen when the pubescence is removed); and its elytral striae are also perfectly simple. The only two examples of this *Notioxenus* which have yet come under my notice were taken—one, in 1860, by the late Mr. Bewicke (to whom the species is dedicated), “amongst native vegetation on the extreme summit of the island,” and the other, more recently, by Mr. Melliss.

## § II. *Linea prothoracica elevata, carinulam efficiens.*

### 54. *Notioxenus rufopictus.*

*N. ater*, nitidus, subcalvus (sc. pube brevi demissa fulvo-cinerea parcissime irroratus); capite prothoraceque sat rugulose punctatis, hujus linea subbasali elevata subrecta (i. e. utrinque vix curvata); elytris profunde crenato-striatis, interstitiis convexis, parce, minutissime et irregulariter punctulatis, maculis parvis plurimis (præsertim ad basin et versus latera) rufis aut testaceo-rufis (plus minus confluentibus) ornatis; antennis breviusculis, rufotestaceis, apicem versus infuscatis; pedibus nigro-piceis, femoribus apicem versus genibusque rufescentioribus, tarsis picescenti-testaceis.

Long. corp. lin. circa 1¾.

*Notioxenus rufopictus*, Woll., *loc. cit.* 213, pl. xiv. f. 2 (1861).

The only example of this beautiful *Notioxenus* which I have yet seen was captured by the late Mr. Bewicke, during his few hours' collecting at St. Helena, on the 21st of July 1860, amongst native vegetation, on the extreme summit of the

island. It is very much smaller than the last species, but rather larger than either of those which follow; and it may be further recognized by its black, shining, and comparatively unpubescent surface, by its strongly and closely punctured head and prothorax (the subbasal line of which is raised, as in the two following species, and hardly at all curved), and by the convex interstices, deep crenate striæ, and numerous bright red patches of its nearly glabrous elytra.

55. *Notioxenus dimidiatus*, n. sp.

*N. subovatus*, viridi- (immaturus piceo-) æneus, nitidus, pube grossa demissa cinerea parce vestitus; capite profunde rugoso-punctato; prothorace in disco antico levius parcinsque punctato, linea subbasali subcurvata et valde elevata; elytris grosse striato-punctatis, punctis striisque (suturali profundiore basi evanescente excepta) in dimidia parte postica evanescentibus, margine basali ipsissimo rugose elevato; antennis picescentibus, apicem versus pedibusque (tibiis versus basin rufescentioribus exceptis) nigrescentibus.

*Variat* immaturus colore omnino pallidiore, etiam ænescenti-ferrugineo, elytrisque fascia media dentata obscura nigrescentiore ornatis.

Long. corp. lin.  $1\frac{2}{3}$ - $1\frac{3}{4}$ .

This species appears to be a little more ovate, and perhaps also (on the average) a trifle smaller, than the *N. rufopictus*; and it is abundantly distinguished by its greenish-brassy, shining, and coarsely but sparingly pubescent surface, by its greatly elevated and evidently curved subbasal prothoracic line, and by the striæ and largely developed punctures becoming evanescent on the posterior half of its elytra. One of the two specimens now before me (and which were taken in St. Helena by Mr. Melliss) seems to be immature; for it is altogether paler (indeed well-nigh æneo-ferruginous), and there are indications on its elytra of an obscure, central, dentate, blackish fascia, which the darker surface of the other example appears to render quite untraceable.

56. *Notioxenus alutaceus*, n. sp.

*N. viridi-æneus*, subnitidus, alutaceus (sed haud punctatus), pube demissa fulvescente parce vestitus; prothoracis linea subbasali subcurvata elevata; elytris postice magis abbreviatis, striis (suturali profunda basi evanescente excepta) obsoletis; antennis piceis, basi rufo-testaceis; pedibus picescentibus, tibiis (tarsisque ad basin minus evidenter) dilute rufo-testaceis.

Long. corp. lin. vix  $1\frac{1}{2}$ .

Judging from the single example now before me, and which

was found in St. Helena by Mr. Melliss, this would seem to be the smallest of the true *Notioxeni* hitherto brought to light; and whilst it agrees with the last species in its somewhat brassy-green hue, it recedes from it totally in its unpunctured, *alutaceous*, and less shining surface, and from *all* the others here enumerated in its clytra (which are a good deal shortened behind) being free from striae, with the exception of a single deep one (evanescent anteriorly) on each alongside the suture.

(Subfam. HOMÆODERIDES.

Prothorax simplex, sc. linea transversa nulla instructus.)

Genus 37. HOMÆODERA (nov. gen.).

*Corpus et instrumenta cibaria* fere ut in *Notioxeno*, sed *antennæ* aperte remotius ab oculis insertæ, *prothorax* simplex (nec linea basali instructus), atque *articulus primus tarsorum posticorum* minus elongatus.

Ab ὄμοιος, similis, et δέρον, thorax.

The *primâ facie* aspect of the three species described below is so much that of the smaller *Notioxeni* (the *N. dimidiatus* and *alutaceus*) that I had at first imagined them actually to belong to the same genus; but a more careful inspection will show that they have certain peculiarities which, although insignificant perhaps in other families, are of primary importance amongst the *Anthribide*, and which necessitate the establishment of a special group for their reception. Thus, they have no appearance whatsoever of a transverse line either before or *at* the extreme base of their prothorax (a structure of peculiar significance in the *Anthribids*); their antennæ also are implanted distinctly further from the eyes than is the case in *Notioxenus* (where the scrobs absolutely adjoins the anterior margin); and the first joint of their two hinder feet is less elongated. In their more or less faintly metallic, sparingly pubescent, and sculptured surfaces they have much the appearance of minute *Notioxeni*.

57. *Homæodera rotundipennis*, n. sp.

*H.* subovata, nigra, in clytris subænescens, pube grossa demissa fulvescente parce nebulosa; epite prothoraceque subrugose stri-guloso-(vel etiam subreticulato-) alutaceis sed vix punctatis, opacis; elytris subrotundatis basi truncatis sed pone medium paulo latioribus, obsolete subæneo-micantibus, grosse et profunde striato-punctatis, punctis magnis, interstitiis rugosis et subcostato-

elevatis, ante apicem obsolete subfasciatis; antennis pedibusque nigro-piceis, illis ad basin rufo-ferrugineis.

Long. corp. lin.  $1\frac{1}{3}$ .

The apparently somewhat larger size (judging from the single example now before me) of this little *Homœodera*, added to its slightly darker and more opaque and roughened head and prothorax (which seem to be free from even an obscure brassy tinge, and are rather more substriatose perhaps, or even granulous, than punctate), its more rounded and coarsely sculptured elytra (the punctures and striæ of which are exceedingly large, with the interstices roughened and elevated, or subcostate), and its appreciably blacker limbs, will sufficiently distinguish it from both of the following species. The example from which my diagnosis has been drawn out was taken in St. Helena by Mr. Melliss.

58. *Homœodera alutaceicollis*, n. sp.

*H.* suboblonga, subæneo-nigra, pube grossa demissa fulvescente parce nebulosa; capite prothoraceque argute, regulariter, et obtuse alutaceis (necnon, oculo fortissime armato, punctis levissimis obsolete remotis parvissime irroratis), subopacis; elytris ovalibus, nitidioribus, argute striato-punctatis, ante apicem plerumque obsolete subfasciatis; antennis pedibusque aut piceis aut testaceo-piceis, illis ad basin rufo-ferrugineis, articulis intermediis sensim brevioribus.

Long. corp. lin.  $1-1\frac{1}{3}$ .

The present species and the following one are rather more oblong than the *H. rotundipennis*, their elytra being relatively a trifle longer and less rounded; but in point of mere size (although apparently there is not much difference between them) they would seem to follow each other in a regular sequence. In other respects the *H. alutaceicollis* may be known by its head and prothorax being conspicuously (but not roughly) alutaceous, which makes the surface subopaque without being at all roughened, and gives to it, when viewed beneath the microscope, the texture somewhat of seal-skin; and by its elytra being sharply striate-punctate, but rather less coarsely (and roughly) so than is the case in either of its allies. Several examples of it are amongst the St.-Helena collection of Mr. Melliss.

59. *Homœodera pygmaea*, n. sp.

*H.* suboblonga, subæneo- vel subviridi-nigra, parum nitida, pube grossa demissa fulvescente parce nebulosa; capite prothoraceque rugulose alutaceis punctis magnis sed vix profundis dense

obsitis; elytris ovalibus, rugose punctato-striatis, interstitiis rugosis ac parum elevatis, ante apicem plerumque obsolete subfasciatis; antennis pedibusque fere ut in specie præcedente.

Long. corp. lin.  $\frac{3}{4}$ -1.

The few examples which I have yet seen of this *Homœodera* were, like those of the last, collected by Mr. Melliss. It is apparently a trifle smaller, on the average, than the *H. alutaceicollis*, to which, however, in its somewhat oblong outline and general *facies* it is closely allied. It may nevertheless be recognized from *both* of the preceding species by its head and prothorax being a little less opaque (or nearly as shining as the elytra), and densely studded with large but not particularly deep punctures. Its elytral sculpture is appreciably coarser and rougher than that of *alutaceicollis*, but not so coarse as in *rotundipennis*.

#### Fam. 20. Bruchidæ.

#### Genus 38. BRUCHUS.

Geoffroy, Ins. de Paris, i. 163 (1762).

#### 60. *Bruchus rufo-brunneus*, n. sp.?

*B. subquadrato-ovatus*, rufo-brunneus, elytris clarioribus, subtus dense cinereo, supra inæqualiter fulvescente et cinereo piloso-variegatus, antennis pedibusque piceo-testaceis, illis versus apicem (saltem in sexu masculino) pedibusque posticis paulo obscurioribus; capite prothoraceque conico dense ruguloso-punctatis, illo fortiter carinato, hoc in parte media basali macula subquadrata sub-bipartita cinerea notato; elytris profunde striatis, interstitiis rugulosis convexis, fasciis 3 obsoletissimis nigrescentibus (interdum cinereo terminatis) intus valde abbreviatis sæpius obscure nebuloso ornatis; femoribus posticis denticulis duobus contiguis (e marginibus externo et interno surgentibus) subtus armatis, tibiis posticis ad angulos apicales internos spinis duabus inæqualibus (una sc., præsertim in sexu masculino, elongata robusta) terminatis. *Mas* antennis multo longioribus, paulo crassioribus, ac intus longe pectinatis; pedibus anterioribus etiam subgracilioribus longioribusque.

Long. corp. lin. circa  $1\frac{1}{2}$ .

It is with the greatest reluctance that I venture to describe as new several examples of a *Bruchus* which are now before me, and which were captured by Mr. Melliss at St. Helena, because such a vast majority of the *Bruchi* hitherto known are so peculiarly liable to accidental importation throughout the civilized world, along with various seeds and fruits, that I cannot but feel it probable that the one now under consideration may have been found in or about the houses and stores, and may



be well known (and perhaps even recorded) for some other tropical country. Yet, as I have been unable to identify it with any of the numerous species to which I have had access, I think it better to run the risk of its having been already described than to omit it altogether from the present catalogue.

The main features of this *Bruchus* seem to consist in its reddish-brown hue, the elytra, however, being more pale and rufescent than the head and prothorax; in the latter being dappled with cinereous scales, which are concentrated into a squarish central bipartite patch in the middle (behind the scutellum), and sometimes apparently into two obsolete and fragmentary (or broken-up) oblique bands; in its head being powerfully keeled; in its elytra being deeply striate (with the interstices convex), and likewise ornamented (in unrubbed specimens) with rudimentary bands or fasciæ, on either side, composed, in examples which are highly coloured, of darkish cloudy patches with a few ashy scales between; in the antennæ of the male being very much longer than those of the female, and deeply pectinated internally; and in its two posterior femora being armed beneath with two small denticles, alongside each other and arising out of the inner and outer edges respectively—whilst the two inner angles of its two hinder tibiæ are each terminated by a spine, one of which (particularly in the male sex) is robust and elongated.

61. *Bruchus advena*, n. sp.?

*B. fere ut species præcedens, sed paulo angustior ac sensim magis ellipticus (pygidio minus perpendiculari), capite minus eviderter carinato, prothorace sensim profundius punctato, elytris clarius rufescentibus lætiusque pictis, multo magis tenuiter leviusque suberenulato-striatis, interstitiis valde depressis (nec convexis), antennis brevioribus, femoribusque posticis omnino simplicibus (nec subtus denticulatis) et spinis terminalibus minus robustis.*

Long. corp. lin.  $1\frac{1}{2}$ .

Although with much the same colouring, and *primâ facie* aspect, as the last species, it is quite impossible to identify with it the single example from which the above diagnosis has been drawn out—though I feel it extremely likely that both of them are natives of the same country (wheresoever that may be), and may perhaps have become naturalized, through the medium of commerce, in the stores and granaries of St. Helena. The specimen before me (which was captured by Mr. Melliss) appears to be a female one, so that I am unable to decide whether there are any particular features (of antennæ &c.) to distinguish the opposite sex; but, judging from this individual, the species is a trifle narrower and more

elliptic than the *B. rufobrunneus* (its pygidium being less perpendicularly decurved), with its head less evidently keeled, its antennæ shorter and more compact, its prothorax rather more deeply punctured, and with its elytra not only of a redder tint and more conspicuously marked, but also very much more finely and lightly striated, and considerably flatter in the interstices. The terminal spines of its two hinder tibiæ also are less developed, and its hinder femora are entirely free from all traces of the two small denticles which characterize its ally.

Fam. 21. **Halticidæ.**Genus 39. **LONGITARSUS.**

Latreille, Fam. Nat. 405 (1825).

62. *Longitarsus Helencæ.*

*L. oblongo-ovatus*, æneo-viridis, subnitidus, alutaceus; capite impunctato; prothorace punctulis levibus minutis parce irrorato, ante medium latiusculo, postice paulo angustiore, angulis posticis obtusis; elytris profundius punctatis; antennis pedibusque longissimis, rufo-testaceis, illis versus apicem femoribusque posticis vix obscurioribus.

*Mas* [an quoque fœm.?] tarsis anterioribus art<sup>o</sup> 1<sup>mo</sup> magno, valde dilatato.

Long. corp. lin. 1.

*Longitarsus Helencæ*, Woll., Journ. of Ent. i. 214 (1861).

A single example of this distinct *Longitarsus* was taken in St. Helena by Mr. Bewicke, in 1860; and two more have lately been communicated by Mr. Melliss. It may easily be known by its alutaceous surface and brassy-green hue, by its pale elongated limbs, and by the largely developed joint of the four anterior feet of the male. Its head appears to be quite unpunctured, and its prothorax sparingly sprinkled with punctules which are extremely minute, whilst its elytra are rather strongly punctate\*.

\* Whether any *Cryptocephalus* or *Clythra* occurs in St. Helena I cannot say; but I may call attention, in this part of my catalogue, to the *Cryptocephalus rujicollis* of Fabricius, which was originally described by him (Syst. Ent. 109) in 1775 from a St.-Helena specimen (or specimens) in the collection of Sir Joseph Banks. Judging from his own publications, he seems to have fallen into some unaccountable mistake (or even misrepresentation) regarding this species, which he had himself first defined, and ultimately to have shifted his diagnosis to a Mediterranean insect which in all probability is totally distinct from the St.-Helena one; for, in 1792 (*vide* Ent. Syst. i. ii. 61), he added to his original description, and gave as the *habitat* not only St. Helena, but (on the authority of Prof. Helwig) Italy!! In 1798 (*vide* Suppl. 114, of the Ent. Syst.) he appears

Fam. 22. *Cassididæ*.Genus 40. *ASPIDOMORPHA*.

Hope, Col. Man. (1840).

63. *Aspidomorpha miliaris*.

- A. "flava, thorace immaculato, elytris nigro punctatis: margine bifasciato. Habitat in ins. St. Helenæ. *Mus. Dom. Banks*. Statura *C. marginatæ*. Antennæ flavæ, apice nigræ. Thoracis clypeus rotundatus, integer, immaculatus. Elytra lævia, flava, punctis circiter 10 nigris sparsis. Margo uti in reliquis dilatatus fasciis duabus, altera ad basin, altera versus apicem, nigris. Sutura apice nigra. Subtus nigra, margine flavescente. Pedes flavi." [Ex *Fabricio*.]

*Cassida miliaris*, Fab., Syst. Ent. 91 (1775).

— — —, Oliv., *Encycl. Méth.* v. 385 (1791).

— — —, Id., Ent. vi. 943. 33, t. 2. f. 25 (1808).

— — —, Fab., Ent. Syst. i. 300 (1792).

— — —, Id., Syst. Eleuth. i. 400 (1801).

*Aspidomorpha miliaris*?, Bohem., Mon. Cass. ii. 261 (1854).

I know nothing of the present insect beyond the mere fact of the above quotation from Fabricius; but as the species is stated plainly to have come from St. Helena, and to be in the Banksian collection, I can see no reason for doubting its *habitat*, particularly since other *Coleoptera* belonging to the late Sir Joseph Banks were unquestionably (as in the case of the *Cydonia lunata*) received from the same island. I therefore conclude that there is some member of the *Cassididæ* to be

to have discovered that the insect was a *Clythra*, and cited it accordingly, though whether this conclusion was arrived at after a re-examination of the original St.-Helena example, or merely of those from southern Europe, it is impossible now to tell; but in any case it is quite clear that his first description applied to the St.-Helena one, and not to that from Italy. Having thus, however, altered his diagnosis so as to make it tally with the Italian species, he appears to have lost sight of the original St.-Helena type altogether; for in the Syst. Eleuth. (ii. 38) he still refers to his former volumes, but records southern Europe as the *only habitat* for his "*Clythra ruficollis*," omitting even a passing *allusion* to St. Helena!! After this admission of his own, it is not surprising that European naturalists should have accepted, on his authority, the name of *ruficollis* (although applied at first to a St.-Helena species) for the Mediterranean insect; and accordingly every subsequent writer, including even Lacordaire (*Mon. des Phytoph.* ii. 100), has so done; and yet it seems to me to be more than doubtful whether the well-known *Clythra* (or *Macroleues*) *ruficollis* of southern Europe is in reality identical with Fabricius's original "*Cryptocephalus ruficollis*" (despite his own subsequent representation) from St. Helena. If it should prove ultimately that the two are different, it follows of necessity that the title "*ruficollis*" (whatsoever the *genus* may be) will have to apply to the insect from that island, and that the European one must receive a new name.

found in St. Helena, answering to the Fabrician diagnosis, which has escaped detection in more recent times; and my reason for regarding it as an *Aspidomorpha* (a genus which occurs in western Africa and the Cape-Verde archipelago) is simply because Boheman, in his Monograph of the family, cites the *Cassida miliaris* of Fabricius as a member of that particular genus. Yet, on the other hand, Boheman does not acknowledge the species which he has identified with the Fabrician one as a native of St. Helena at all, but, rather, of the East Indies, Java, Celebes, China, and the Philippine Islands, which at once raises a geographical difficulty which it is not easy to solve. But, as there appears no cause (in the absence of any kind of explanation by Boheman) for assuming the originally asserted *habitat*, of Fabricius, to be incorrect, I prefer the contrary conclusion, and should be inclined to think that Boheman may himself have been mistaken in identifying a *Cassida* of Eastern Asia with one (*perhaps* closely allied) from St. Helena. At any rate, as I have no evidence (beyond the tacit assumption of Boheman) that Fabricius and Sir Joseph Banks were alike in error concerning the country from which the original *C. miliaris* was received, I have no choice but to include the species in the present memoir.

### Fam. 23. Coccinellidæ.

#### Genus 41. CYDONIA.

Mulsant, Sécürip. 430 (1851).

#### 64. *Cydonia lunata*.

*Coccinella lunata*, Fab., Syst. Ent. 86 (1775).

— —, Id., Syst. Eleuth. i. 384 (1801).

*Cydonia lunata*, Muls., Sécürip. 431 (1851).

— —, Woll., Journ. of Ent. i. 214 (1861).

This curiously and prettily marked Coccinellid appears to be common in St. Helena, where it has been taken abundantly by Mr. Melliss and previously also by Mr. Bewicke and others. Indeed, although with a wide geographical range (it having been recorded from Senegal, the Cape of Good Hope, Caffraria, Madagascar, the islands of Bourbon and Mauritius, the East Indies and Java), it was originally described by Fabricius (in 1775) from St.-Helena specimens, now in the Banksian collection; and therefore, whatever doubt may be entertained as to the claim for specific separation of some of the extreme states which have been ascribed to it, there can at least be no question about the St.-Helena form, which must of necessity be looked upon as the typical one.

## Genus 42. EPILACHNA.

Chevrolat, Dict. Univ. d'Hist. Nat. iv. 43 (1844).

65. *Epilachna chrysomelina*.

*E.* "coleopteris rufis: punctis duodecim nigris, thorace immaculato. Habitat in ins. St. Helenæ. *Mus. Dom. Banks.* Major. Caput et thorax rubra, immaculata, margine paullo pallidiora. Elytra rufa, punctis sex nigris per paria distributis. Pedes flavescentes." [Ex *Fabricio*.]

*Coccinella chrysomelina*, Fab., Syst. Ent. 82 (1775).

— *capensis*, Thunb., Nov. Ins. Spec. i. 16, tab. 1. f. 21 (1781).

— *chrysomelina*, Fab., Ent. Syst. i. 278 (1792).

— —, Id., Syst. Eleuth. i. 368 (1801).

*Epilachna chrysomelina*, Muls., Sécurip. 793 (1851).

Although I have never seen a St.-Helena example of the Mediterranean *E. chrysomelina*, I can scarcely refuse it a place in the present memoir, inasmuch as it was originally described by Fabricius, in 1775 [vide the above diagnosis], from an example, or examples, in the collection of Sir Joseph Banks, which had been obtained in that island. Indeed, as it appears to occur also at the Cape of Good Hope, and Fabricius himself in 1792 cites as its *habitat* "in Cacto opuntio Africae," there is no reason for doubting that the Banksian type was truly (as stated) a St.-Helena one, though it is of course highly probable that the species may have been introduced accidentally into the island, perhaps along with plants of the *Cactus opuntia* (or "prickly pear"), and so have become naturalized. It is recorded likewise in the north of Africa; but it has not yet been observed in any of the Atlantic archipelagos.

## Fam. 24. OPATRIDÆ.

## Genus 43. OPATRUM.

Fabricius, Syst. Ent. 76 (1775).

66. *Opatrum hadroides*.

*O. oblongum*, latiusculum, nigrum, opacum, ubique granulato-rugulosum, breviter fulvescenti-pubescentis; capite lato, ad latera ante oculos subrotundato-ampliato; prothorace brevi, ad latera subæqualiter leviter rotundato, angulis anticis acutiuseculis, posticis acutis sed haud longe productis; elytris parallelis (ad humeros rectangulis), subpunctato-striatis, interstitiis subconvexis. Long. corp. lin.  $3\frac{1}{2}$ –5.

*Opatrum hadroides*, Woll., Journ. of Ent. i. 215 (1861).

The present *Opatrum*, like most of the allied species in the various Atlantic archipelagos, appears to abound in St. Helena, where it was taken by the late Mr. Bewicke in 1860, and

where, according to Mr. Melliss, it is often peculiarly gregarious in cultivated spots, especially the potato-grounds. When publishing my diagnosis of it in 1861, I stated that "although unwilling to erect a new species in such an extensive and obscure genus as *Opatrum*, yet, after a careful comparison of the insect under consideration with a long series of Atlantic forms (from Madeira, the Canaries, the Cape Verdes, and the Cape of Good Hope), I am induced to do so in this instance, since the remoteness of its island *habitat* renders it probable that it will be found to be peculiar to St. Helena. The whole of the winged *Opatra* (*i. e.* the *Gonocephala* of Solier) are moulded so nearly on the same type, that small differences which might be disregarded in many groups become important with them; and, after a close examination, I am convinced that there are no characters so much to be depended upon as the exact form of the *genæ*, or dilated sides of the head immediately in front of the eyes, and the relative depth of the emargination (involving the greater or less acuteness of the anterior angles) of the prothorax. The *O. hadroides* is very nearly akin to a species which was taken by Mr. Bewicke at the Cape of Good Hope; but it is altogether rather larger, broader, and more parallel, its head is a little wider, with the *genæ* more rounded, its prothorax is less deeply scooped-out in front, with the anterior angles consequently less porrect and more obtuse, the hinder angles also are somewhat less produced, and its shoulders are more rectangular. Although narrower and on a smaller scale, it has a slight *primâ facie* resemblance, in general contour, to the more parallel-sided *Hadri* of the Madeiran group—a circumstance which has suggested its trivial name."

## Fam. 25. Ulomidæ.

## Genus 44. ALPHITOBIUS.

Stephens, Ill. Brit. Ent. v. 11 (1832).

67. *Alphitobius diaperinus*\*.*Tenebrio diaperinus*, Kugel., in Pnz. Fna Ins. Germ. 37. 16 (1797).*Alphitobius diaperinus*, Woll., Col. Atl. 419 (1865).

—, Id., Col. Hesp. 208 (1867).

Judging from the specimens which were taken by Mr. Melliss, the widely spread *A. diaperinus* has become established in St. Helena, as is the case with it in the Madeiras, Canaries, Cape-Verdes, and Ascension, and indeed throughout the greater portion of the civilized world; but I need scarcely add that it

is no more connected, in reality, with our present fauna than it is with that of any other country where it has in like manner been introduced through the medium of commerce.

68. *Alphitobius piceus*\*.

*Tenebrio mauritanicus*, Fab. [nec L., 1767], Ent. Syst. i. 113 (1792).

*Helops piceus*, Oliv., Ent. iii. 58. 17. 22 (1795).

*Tenebrio fagi*, Pnz., Fna Ins. Germ. 61. 3 (1799).

*Alphitobius piceus*, Woll., Col. Atl. 419 (1865).

— —, Id., Col. Hesp. 208 (1867).

Likewise obtained by Mr. Melliss in St. Helena, but, of course (as in the case of the preceding species), naturalized through the medium of commerce. It has been established equally in the Azores, Madciras, Canaries, Cape-Verdes, and in Ascension, in which last-mentioned island it was found, in company with the *A. diaperinus*, by the late Mr. Bewicke, not in houses and amongst farinaceous substances, as we should have expected, but "in the dung of sea-birds, miles from habitable parts," which is undoubtedly a singular habit for these common and almost cosmopolitan insects to have acquired.

*A. piceus* may be known from *diaperinus* by being a trifle narrower and less shining, by its prothorax being relatively a little broader, rounder (and more margined) at the sides, somewhat more thickly punctured, and with the hinder angles more acute, by the punctures of its elytral interstices being larger and more numerous, and by its tibiæ being appreciably less widened, and almost free from (even minute) spinules. Moreover it scarcely attains quite so large a stature as its ally.

## Genus 45. GNATHOCERUS.

Thunberg, Act. Holmiens. 47 (1814).

69. *Gnathocernus cornutus*\*.

*Trogosita cornuta*, Fab., Ent. Syst. (Suppl.) 51 (1798).

*Cerandria cornuta*, Woll., Ins. Mad. 490 (1854).

*Gnathocernus cornutus*, Id., Col. Atl. 420 (1865).

— —, Id., Col. Hesp. 204 (1867).

Like the last two species, and the two which follow, the almost cosmopolitan *G. cornutus* has (judging from examples now before me, which were captured by Mr. Melliss) become established in St. Helena, where, no doubt, it must occur, amongst farinaceous and other substances, in and about the houses and stores. It has in like manner been introduced (of

course through the medium of commerce) in the Madeiras, Canaries, Cape-Verdes, and Ascension.

Genus 46. TRIBOLIUM.

MacLeay, Annul. Javan. 47 (1825).

70. *Tribolium ferrugineum*\*.

*Tenebrio ferrugineus*, Fab., Spec. Ins. i. 324 (1781).

*Tribolium ferrugineum*, Woll., Col. Atl. 420 (1865).

— —, Id., Col. Hesp. 204 (1867).

There is hardly any Coleopterous insect more liable to accidental introduction, along with numerous articles of food and commerce, into the various countries of the civilized world than the present one; and it is not surprising, therefore, that it should have been found by Mr. Melliss, together with other species of similar habits, in St. Helena. It has become established, in like manner, in the Azorean, Madeiran, Canarian, and Cape-Verde archipelagos.

Fam. 26. Tenebrionidæ.

Genus 47. TENEBRIO.

Linnaeus, Syst. Nat. edit. 6 (1748).

71. *Tenebrio obscurus*\*.

*Tenebrio obscurus*, Fab., Ent. Syst. i. 111 (1792).

— —, Woll., Col. Atl. 424 (1865).

The common *Tenebrio obscurus* has become naturalized in the houses and granaries of St. Helena, where it was taken abundantly by Mr. Melliss. It would seem to have acquired a more southern range, on the whole, than *T. molitor*; for while it has been established almost universally throughout the Azorean, Madeiran, and Canarian archipelagos, *T. molitor*, on the contrary, I have never yet fallen in with in any of them—two examples, which were captured in Madeira, many years ago, by the late Dr. Heineken, supplying the only instance, so far as I am aware, of its occurrence in the Atlantic groups.

Genus 48. ZOPHOBAS.

(Dejean) Blanch., Hist. Nat. des Ins. ii. 15 (1840).

72. *Zophobas concolor*, n. sp.

*Z. subparallelo-elongatus*, niger (concolor), subnitidus sed interdum hinc inde quasi nebuloso-subopacus, calvus, alatus; capite antice  
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parec sed postice etiam parcius grossiusque punctato, utrinque intra angulos frontales foveola minuta impresso: prothorace transverso-subquadrato, antice paulo latiore et leviter rotundato, angulis anticis rotundate obtusis, posticis subproducte acutiusculis, sensim marginato, convexo, in disco punctis magnis remotis parcius irrorato, postice in medio transversim impresso, necnon utrinque ad basin ipsissimam foveola parva brevi notato; elytris prothorace paulo latioribus, postice regulariter leniterque attenuatis, grosse punctato-sulcatis; antennis pedibusque longiusculis, in utroque sexu similibus æqualibus.

*Mas*, vix minor, clypeo antice profunde arcuato-emarginato, tibiis anticis intus omnino calvis, posterioribus versus apicem paululum fulvo-pubescentibus.

*Fem.*, vix major, clypeo antice recte truncato, tibiis intus versus apicem (præsertim anticis) breviter fulvo-pubescentibus.

Long. corp. lin.  $9\frac{1}{2}$ –10.

Judging from the very short and imperfect "diagnosis" (so called) of Fabricius, this large and uniformly black Tenebrionid might possibly agree with his *Helops morio* from the West Indies and other parts of Equatorial America; but I think that its sexual peculiarities do not tally with what little I can gather elsewhere about those of that species; for there seems to be no difference in the relative length of the limbs, and curvature of the tibiæ, between the males and females of the insect from St. Helena. Yet, as in some of the other recorded members of this singular group, there is the strange dissimilarity in the form of the clypeus (which is straightly truncate in the females, but deeply scooped-out in the opposite sex), as well as the perfect freedom from hairs of the front male tibiæ, whilst the female ones are (like the four hinder ones of that sex) furnished internally, towards their apex, with a short fulvescent pile. Were it not for the greater length of its limbs (particularly the antennæ), the present insect, in its comparatively narrow elongated outline, and general contour, would have much the *primâ facie* aspect of a large *Tenebrio*; and it may be further recognized by its deep-black surface being somewhat dulled, or clouded, in parts (especially towards the sides and behind), as though by a kind of *bloom*, by its prothorax being simply besprinkled on the disk with a few large and remote punctures, and by its elytra (which are gradually attenuated towards the apex) being regularly and coarsely punctate-sulcate. Its head is branded with a little foveolet on either side in front, just within the angle of the clypeus; and its prothorax (which is transversely impressed across the greater portion of its base) has a somewhat similar one, and almost equally minute, adjoining the extreme margin. at either end of the transverse impression.

The two examples from which the above diagnosis has been compiled were taken in St. Helena by Mr. Melliss; but whether the species has been naturalized accidentally from America, and occurs only about the houses and cultivated spots, or whether it may have all the appearance *in situ* of being truly indigenous, my ignorance of the circumstances under which the specimens were captured forbids me to conjecture.

Fam. 27. **Mordellidæ.**

Genus 49. MORDELLA.

Linnaeus, Syst. Nat. edit. i. 420 (1758).

73. *Mordella Mellissiana*, n. sp.

*M. angusto-elliptica*, supra arcuata, rufo-brunnea (rarius nigro-brunnea) et pube fulvescente valde demissa dense sericata; capite subsemicirculari, deflexo, oculis magnis; prothorace subconico, basi bisinuato; scutello minuto; clytris regulariter versus apicem attenuatis, apice singulatim rotundatis, haud striatis; pygidio in mucronem elongatum producto; antennis pedibusque anterioribus paulo clarioribus.

Long. corp. lin. 2-3.

The uniformly reddish-brown surface of this rather large *Mordella*, which is densely clothed with a very decumbent, yellowish, or fulvescent silken pubescence, must serve to distinguish it. The strong mucro into which its pygidium is produced, although merely a generic character, will additionally separate it from everything else with which we have to do in the St.-Helena catalogue. The few examples which have come under my notice were captured by Mr. Melliss, after whom it gives me much pleasure to name the species.

Fam. 28. **Staphylinidæ.**

Genus 50. CREOPHILUS.

(Kirby) Steph., Ill. Brit. Ent. v. 202 (1832).

74. *Creophilus maxillosus* \*.

*Staphylinus maxillosus*, Linn., Syst. Nat. 421 ((1758).

——, Woll., Cat. Mad. Col. 188 (1857).

*Creophilus maxillosus*, Id., Col. Atl. 487 (1865).

A single example of the common European *C. maxillosus* is amongst Mr. Melliss's *collectanea* from St. Helena; and there cannot be the slightest doubt, therefore, that the species has

been naturalized in the island from more northern latitudes. It has in like manner become established in the Azores, Madeira, and Canaries.

## CATALOGUS SYSTEMATICUS.

## CARABIDÆ.

1. *Haplothorax*, Waterh.
  1. Burchellii, Waterh.
2. *Calosoma*, Weber.
  2. haligena, W.
  3. Helenæ, Hope.
3. *Pristonychus*, Dej.
  4. complanatus, Dej.
4. *Bembidium*, auct.
  5. Mellissii, W.

## SPHÆRIDIDÆ.

5. *Dactylosternum*, W.
  6. abdominale, Fab.
6. *Sphæridium*, Fab.
  7. dytiscoides, Fab.

## CUCUJIDÆ.

7. *Læmophlæus*, (Dej.) Erichs.
  - \*8. pusillus, Schön.
8. *Cryptamorpha*, W.
  9. musæ, W.

## CRYPTOPHAGIDÆ.

9. *Cryptophagus*, Hbst.
  - \*10. affinis, St.

## MYCETOPHAGIDÆ.

10. *Mycetæa*, (Kby.) Steph.
  - \*11. hirta, Gyll.
11. *Typhæa*, (Kby.) Steph.
  - \*12. fumata, Linn.

## DERMESTIDÆ.

12. *Dermestes*, Linn.
  - \*13. cadaverinus, Fab.
  - \*14. vulpinus, Fab.
13. *Attagenus*, Lat.
  - \*15. gloriosæ, Fab.

## HISTERIDÆ.

14. *Tribalus*, Erichs.
  16. 4-striatus, W.
15. *Saprinus*, Erichs.
  17. lautus, W.

## APHODIADÆ.

16. *Aphodius*, Illig.
  - \*18. lividus, Oliv.

## RUTELIDÆ.

17. *Adoretus*, (Eschsch.) Castln.
  19. versutus, Harold.

## DYNASTIDÆ.

18. *Heteronychus*, (Dej.) Burm.
  20. arator, Fab.
19. *Melissius*, (Bates) W.
  21. endoxus (Dej.), W.
  22. adumbratus, W.

## ELATERIDÆ.

20. *Heteroderes*, Lat.
  23. puncticolis, W.

## CLERIDÆ.

21. *Corynetes*, Hbst.
  - \*24. rufipes, Thunb.

## PTINIDÆ.

22. *Gibbium*, Scop.
  - \*25. scotias, Fab.

## ANOBIADÆ.

23. *Anobium*, Fab.
  - \*26. velatum, W.
  - \*27. paniceum, Linn.
  - \*28. striatum, Oliv.
  - \*29. confertum, W.

## BOSTRICHIDÆ.

24. *Rhizopertha*, Steph.
  - \*30. bifoveolata, W.
  - \*31. pusilla, Fab.

## TOMICIDÆ.

25. *Tomicus*, Lat.
  32. æmulus, W.

## HYLESINIDÆ.

26. *Hylurgus*, Lat.
  - \*33. ligniperda, Fab.

## CURCULIONIDÆ.

(Cossonides.)

27. *Stenoscelis*, W.
  34. hylastoides, W.
28. *Microzylobius*, Chev.
  35. Westwoodii, Chev.
  36. vestitus, W.
  37. lacertus, W.
  38. lucifugus, W.
  39. terebrans, W.
  40. obliteratus, W.
  41. debilis, W.
  42. Chevrolatii, W.
  43. conicollis, W.
  44. monilicornis, W.

29. *Pentarthrum*, W.  
45. *subcæcum*, W.  
(Rhynchophorides.)  
30. *Sitophilus*, Schönh.  
46. *oryzæ*, Linn.  
(Synaptonychides.)  
31. *Nesiotès*, W.  
47. *squamosus*, W.  
48. *asperatus*, W.  
(Trachyphlœides.)  
32. *Trachyphlæosoma*, W.  
49. *setosum*, W.  
(Otiorrhynchides.)  
33. *Sciobius*, Schönh.  
50. *subnodosus*, W.  
34. *Otiorrhynchus*, Germ.  
\*51. *sulcatus*, Fab.
- ANTHRIBIDÆ.  
35. *Araocerus*, Schönh.  
\*52. *fasciculatus*, De Geer.  
36. *Notiorenus*, W.  
\*53. *Bewickii*, W.  
54. *rufopictus*, W.  
55. *dimidiatus*, W.  
56. *alutaceus*, W.  
37. *Homæodera*, W.  
57. *rotundipennis*, W.  
58. *alutaceicollis*, W.  
59. *pygmæa*, W.
- BRUCHIDÆ.  
38. *Bruchus*, Geoffr.  
60. *rufobrunneus*, W.  
61. *advena*, W.
- HALTICIDÆ.  
39. *Longitarsus*, Lat.  
62. *Helena*, W.
- CASSIDIDÆ.  
40. *Aspidomorpha*, Hope.  
63. *miliaris*, Fab.
- COCCINELLIDÆ.  
41. *Cydonia*, Muls.  
64. *lunata*, Fab.  
42. *Epilachna*, Chev.  
65. *chrysolina*, Fab.
- OPATRIDÆ.  
43. *Opatrum*, Fab.  
66. *hadroides*, W.
- ULOMIDÆ.  
44. *Alphitobius*, Steph.  
\*67. *diaperinus*, Kugel.  
\*68. *piceus*, Oliv.  
45. *Gnathocerus*, Thunb.  
\*69. *cornutus*, Fab.  
46. *Tribolium*, MacLeay.  
\*70. *ferrugineum*, Fab.
- TENEBRIONIDÆ.  
47. *Tenebrio*, Linn.  
\*71. *obscurus*, Fab.  
48. *Zophobas*, (Dej.) Blanch.  
72. *concolor*, W.
- MORDELLIDÆ.  
49. *Mordella*, Linn.  
73. *Mellissiana*, W.
- STAPHYLINIDÆ.  
50. *Crocophilus*, (Kby.) Steph.  
\*74. *maxillosus*, Linn.

V.—*Notule Lichenologicae*. No. XXXI.

By the Rev. W. A. LEIGHTON, B.A., F.L.S., F.B.S. Ed.

*On certain new Characters in the Species of the Genera  
Nephroma (Ach.) and Nephromium, Nyl.*

EVERY student of the Lichenes, who examines his specimens with close observation, must frequently have noticed many characters which are not included in the diagnoses of species generally given by writers. These characters, which may be termed secondary, are usually minute and easily overlooked. Nevertheless where they are found to be constant, they prove to be important and characteristic, and of a useful